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09/651,307	08/30/2000	Ramanamurthy Dantu	1285-0027ALC-135636	2278

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EXAMINER
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PHILPOTT, JUSTIN M

ART UNIT	PAPER NUMBER
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2665

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/651,307

Applicant(s)

DANTU ET AL.

Examiner

Justin M Philpott

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 and 29-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 and 29-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2,3,5.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 31-33 are objected to because of the following informalities: in claim 31, “amount;” should be changed to “amount; and” and “nodes; and” should be changed to “nodes, and”. That is, the “if so, ...” statement recited in the claims should include the propagating step, since the propagating step is not possible without the establishing step within the “if so” statement. For example, as presently written, the claim indicates that if the determining step provides a negative result, the suspending and establishing steps do not occur. However, as presently written, the claim additionally recites that the propagating step would still occur if such a negative result from the determining step occurs, which is not possible since the alternative link would not be established. By amending the claim as suggested above, the claim more clearly describes an operable invention. Appropriate correction is required.
2. Also, unrelated to the above objection, applicant is advised that the claims as filed do not recite claim 28 (i.e., claim 27 is followed by claim 29). That is, currently claims 1-27 and 29-53 are pending in the application.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the

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invention. Specifically, claim 3 recites a protocol, Q.931, without reference to a specific edition and/or publication date of the particular protocol, rendering the claim indefinite. Applicant may overcome this rejection by amending the claims to include, e.g., a specific edition and/or publication date of the particular claimed protocol.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1 and 4-7 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,324,183 to Miller et al.

Regarding claim 1, Miller teaches a telecommunications network element comprising: a first structure (e.g., SP1 in FIG. 16) operable to effectuate signaling communication over a signaling network (e.g., SS7 network) using a signaling protocol (e.g., SS7 protocol); a second structure (e.g., N1) operable to transport the signaling communication across a packet-switched

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network (e.g., IP network) using an Internet Protocol-based transport protocol (e.g., IP), the IP-based transport protocol including a plurality of IP-based messages (e.g., see col. 9, lines 1-32); and a peer-to-peer protocol adaptation structure (e.g., 1500) associated with the first and second structures, the PPA structure operating to convert the signaling communication between the signaling protocol and the IP-based messages (e.g., see col. 12, lines 49-62 regarding translation/conversion of SS7 to IP within STP; see also col. 15, lines 12-17), the PPA structure (e.g., 1500) including functionality to facilitate the first structure (e.g., SP1) to locally process the signaling protocol's signaling messages (e.g., SP1 receives/transmits SS7 messages, see col. 9, lines 1-32).

Regarding claims 4 and 5, Miller teaches the signaling protocol comprises a common channel signaling protocol, and specifically which comprises SS7 protocol (e.g., see SS7 in FIG. 16) associated with switched circuit network.

Regarding claims 6 and 7, Miller teaches the switched network comprises a wireline and/or wireless telephony network (e.g., see col. 4, line 66 – col. 5, line 6 regarding applicability to wired and cellular/wireless telephony networks).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller.

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Regarding claims 2 and 3, Miller teaches that it is known in the art for an SS7 system to be associated with an ISDN media (e.g., see col. 2, lines 48-52 regarding ISDN User Part). While Miller may not specifically disclose the ISDN is associated with a Q.931 access signaling protocol, as discussed above, Miller teaches association with an ISDN media and the Q.931 access signaling protocol is a well known protocol for association with an ISDN media (and/or PRI media). Furthermore, it is well known in the art that applying a well known standard, or protocol, to a system provides the system with significantly improved industrial applicability. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the Q.931 access signaling protocol to the system of Miller, since it is well known in the art that applying a well known standard, or protocol, to a system provides the system with significantly improved industrial applicability.

9. Claims 8, 9, 14, 15, 23, 26, 30, 38 and 46-48 rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of applicant's admitted prior art.

Regarding claims 15, 23, 26, 30, 38 and 46, Miller teaches the element discussed above regarding claim 1 and further, teaches an SS7 protocol is utilized for the signaling protocol (e.g., see col. 9, lines 1-32), the PPA provides an MTP2 interface between an MTP3 layer of the SS7 protocol and the second structure's protocol (e.g., see col. 11, lines 22-43 and col. 13, lines 20-35), and wherein the PPA includes functionality to locally process functions with an MTP2 layer (e.g., SP1 receives/transmits SS7 messages, see col. 9, lines 1-32). While Miller may not specifically disclose that the second structure transports the signaling messages using SCTP, applicant admits that it is well known in the art to utilize SCTP for SS7 messages for facilitating

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SS7-over-IP transport (e.g., see specification, page 5). As discussed above, Miller teaches SS7-over-IP transport. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to utilize SCTP for SS7 messages for facilitating SS7-over-IP transport in the element of Miller since applicant admits that it is well known in the art to utilize SCTP for SS7 messages for facilitating SS7-over-IP transport.

Further, regarding claims 23, 26, 30 and 38, Miller teaches a first and second IPSP (e.g., N1 and N2) having MPT3 functionality (e.g., see col. 11, lines 33-42 and col. 13, lines 30-35), and an IP-based virtual link coupling the IPSPs (e.g., see col. 9, lines 8-12 and FIG. 16 regarding virtual link path designated by 2220), and while Miller may not specifically disclose verifying the integrity of the virtual link, Examiner takes official notice that verifying a virtual link's integrity by a node is well known in the art and it would have been obvious to one of ordinary skill in the art to verify the virtual link's integrity in order to maintain a particular quality of service.

Further, regarding claim 46, while Miller may not specifically teach detecting by a node a select condition has occurred, and exchanging message sequence number information between a link to the nodes and retransmitting messages over the link starting at a predetermined sequence number, Miller teaches it is well known in the art to detect by a node a select condition has occurred (e.g., implicit in error detection), and exchanging message sequence number information between a link to the nodes and retransmitting messages over the link starting at a predetermined sequence number (e.g., implicit in error correction) by disclosing that an SS7 link is provided with error detection and error correction in order to provide properly sequenced delivery of SS7 message packets (e.g., see col. 2, lines 31-36). Accordingly, at the time of the

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invention it would have been obvious to one of ordinary skill in the art to include, in the element of Miller, detecting by a node a select condition has occurred, and exchanging message sequence number information between a link to the nodes and retransmitting messages over the link starting at a predetermined sequence number, since Miller discloses that it is well known in the art for an SS7 link to comprise error detection and error correction in order to provide properly sequenced delivery of SS7 message packets.

Regarding claim 8, While Miller may not specifically disclose that the second structure transports the signaling messages using SCTP, applicant admits that it is well known in the art to utilize SCTP for SS7 messages for facilitating SS7-over-IP transport (e.g., see specification, page 5). As discussed above, Miller teaches SS7-over-IP transport. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to utilize SCTP for SS7 messages for facilitating SS7-over-IP transport in the element of Miller since applicant admits that it is well known in the art to utilize SCTP for SS7 messages for facilitating SS7-over-IP transport.

Regarding claims 9, 47 and 48, Miller teaches converting messages between SS7 and a second protocol (e.g., IP) as discussed above (e.g., see col. 6, lines 29-39), wherein the messages implicitly include sequence numbers (e.g., see col. 2, lines 31-36) which are implicitly converted through the message conversion means.

Regarding claim 14, Muller teaches mapping means to maintain a map between an SS7 communication link and its corresponding second protocol association (e.g., see col. 6, lines 40-54 regarding SS7-to-IP primitive which allows for mapping).

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10. Claims 10-13, 16-22, 24, 25, 27, 29, 34-37, 42-45, 49 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view applicant's admitted prior art, further in view of prior art recited by U.S. Patent No. 5,949,871 to Kabay et al.

Regarding claims 10, 11, 49 and 50, Miller in view of applicant's admitted prior art teach the element discussed above regarding claim 9, however, Miller in view of applicant's admitted prior art may not specifically disclose a specific configuration for message sequence numbers. Kabay, however, discloses that it is well known in the art of SS7 signaling that message sequence numbers include forward and backward sequence numbers (e.g., see col. 3, lines 8-18 regarding BSN and FSN). Such fields provide error correction functionality (e.g., see col. 3, lines 16-18) known in the art. Also, as discussed above, Miller considers providing error correction (e.g., see col. 2, lines 31-36). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the prior art SS7 signaling teachings in Kabay to the element of Miller in view of applicant's prior art in order to provide specific means for the error correction disclosed by Miller.

Regarding claim 12, Kabay teaches it is well known in the art to generate User Data messages (e.g., service/application data) based on Message Signal Units provided and operable by the implemented protocols (e.g., see col. 3, lines 20-24). As discussed above, Kabay teaches well known advantages of SS7 networks (e.g., see col. 1, line 7 – col. 6, line 14), and therefore, it would have been obvious to one of ordinary skill in the art to apply the SS7 network teachings disclosed by Kabay to the element of Miller in order to achieve the full known advantages of SS7 networks.

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Regarding claim 13, Kabay teaches generating Link Status messages (e.g., information relating to the status of the link) based on Link Status Units provided and operable by the implemented protocols (e.g., see col. 3, lines 25-31). As discussed above, Kabay teaches well known advantages of SS7 networks (e.g., see col. 1, line 7 – col. 6, line 14), and therefore, it would have been obvious to one of ordinary skill in the art to apply the SS7 network teachings disclosed by Kabay to the element of Miller in order to achieve the full known advantages of SS7 networks.

Regarding claims 16-18, Miller teaches a signaling gateway (e.g., STP IP Gateway, see FIG. 16) is coupled to an SEP (e.g., SP1) in the first network portion and further teaches SS7 networks are coupled to an STP and SSP (e.g., see col. 1, lines 40-55).

Regarding claim 19, Miller teaches the signaling gateway is coupled to an IPSP (e.g., N1) in the second network portion.

Regarding claims 20, 21, 24, 25, 35, 36, 43 and 44, Miller teaches IPSP comprises an IPSCP (e.g., see communication with SCP using IP in col. 6, lines 3-13) or IPSEP (e.g., IP signaling endpoint N1).

Regarding claims 22, 27, 37 and 45, Miller teaches the signaling gateway (e.g., comprising STP IP gateway) is coupled to a media gateway controller (e.g., Data Communications Module DCM 1820, see col. 10, lines 57-65) in a second network portion.

Regarding claims 29, 34 and 42, Miller teaches a second IPSP (e.g., N2) comprises an IP STP (e.g., see communication with STP using IP in col. 6, lines 3-13).

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11. Claims 31-33, 39-41 and 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of applicant's admitted prior art, further in view of U.S. Patent No. 6,154,445 to Farris et al.

Regarding claims 31 and 39, Miller in view of applicant's admitted prior art teaches the methods of claims 30 and 38, however, may not specifically disclose a step of determining if a predetermined quality condition associated with a virtual link between two nodes is degraded by a select amount; and if so, suspending a stream of messages on the virtual link and establishing an alternative link between the two nodes, and propagating the signal bearer traffic over the alternative link.

Farris teaches a system for improved communications utilizing SS7 and IP networks (e.g., see abstract). Specifically, Farris teaches determining if a predetermined quality condition associated with a first link between two nodes is degraded by a select amount (e.g., see col. 10, lines 10-16 regarding threshold quality level); and if so, suspending a stream of messages on the first link and establishing an alternative link between the two nodes, and propagating the signal bearer traffic over the alternative link (e.g., see col. 10, lines 18-25). The teachings of Farris provide improved communication with monitored quality for yielding maximum access with minimum cost routing and reduced congestion (e.g., see col. 19, line 36 – col. 20, line 17). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Farris to the method of Miller in view of applicant's admitted prior art in order to provide improved communication with monitored quality for yielding maximum access with minimum cost routing and reduced congestion.

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Regarding claims 32, 33, 40 and 41, Farris teaches the alternative link comprises an IP-based link or SS7 link (e.g., see col. 9, lines 23-34 and abstract). As discussed above, the teachings of Farris provide improved communication with monitored quality for yielding maximum access with minimum cost routing and reduced congestion (e.g., see col. 19, line 36 – col. 20, line 17). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Farris to the method of Miller in view of applicant's admitted prior art in order to provide improved communication with monitored quality for yielding maximum access with minimum cost routing and reduced congestion.

Regarding claims 51-53, Farris teaches the select condition comprises a QoS condition (e.g., see col. 19, lines 39-43), link failure condition (e.g., see col. 14, line 37 regarding unavailability), and/or link reliability condition (e.g., see col. 14, lines 43-46 regarding busy conditions approaching a pre-specified parameter). As discussed above, the teachings of Farris provide improved communication with monitored quality for yielding maximum access with minimum cost routing and reduced congestion (e.g., see col. 19, line 36 – col. 20, line 17). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Farris to the method of Miller in view of applicant's admitted prior art in order to provide improved communication with monitored quality for yielding maximum access with minimum cost routing and reduced congestion.

### *Conclusion*

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: U.S. Patent No. 6,178,181 to Glitho, U.S. Patent No. 6,625,170 to Curry et al., and

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U.S. Patent No. 6,584,190 to Bressler each disclose methods for improved telephony control signaling over data networks.

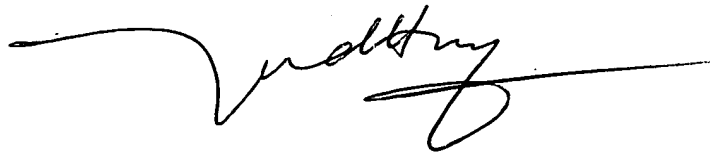
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M Philpott whose telephone number is 703.305.7357. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D Vu can be reached on 703.308.6602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Justin M Philpott



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